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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,863	03/30/2004	Eytan Cohen	200600514-3	3839

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EXAMINER	
MARTIN, LAURA E	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,863	COHEN ET AL.	
	Examiner	Art Unit	
	Laura E. Martin	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-5,13 and 16* is/are allowed.

6)☒ Claim(s) *6-12, 14, 15, 17, and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 8 is rejected under 35 U.S.C. 102(a) as being anticipated by Laksin et al. (US 20020068772).

Laksin et al. discloses the following claim limitations:

As per claim 8: molecules in an ink capable of undergoing polymerization reaction under microwave radiation [0076]; at lest one colorant in said ink [0017] and one or more additives in said ink [0076].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6, 8-10, 12-14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksin et al. (US 20020068772) in view of Souder (US 4156626).

Laksin et al. disclos the following claim limitations:

As per claim 6: an ink having a thermal initiator [0076], printing with said ink an image bearing pattern on a substrate [0016]; and irradiating by microwave radiation said printed image bearing pattern such that said image bearing pattern is cured by heat generated by said microwave radiation [0076].

As per claim 9: the molecules are monomers and oligomers containing acrylate groups [0048].

As per claim 10: he additives are selected from a group of thermal initiators, microwave radiation absorbers, wetting agents, dispersants, rheology modifiers, solvents, and defoamers [0076].

As per claims 17 and 18: the ink contains only polymerizable components that are converted into polymeric coating only after printing and by exposure to microwave radiation [0021] and [0048].

Laksin et al. do not disclose the following claim limitations:

As per claim 6: a microwave absorber to enhance absorption of microwave radiation.

As per claim 12: microwave absorbers selected from components capable of increasing absorption of microwave radiation, said components carbon black, minerals.

As per claim 13: said microwave radiation absorber comprises said polar molecules said polar molecules comprising alcohols, amines, ammonium salts, or conductive polymers.

As per claim 14: microwave absorbers being selected from components capable of increasing the absorption of microwave radiation, said components being polar molecules comprising alcohols, amines, ammonium salts, or conductive polymers.

Souder discloses the following claim limitations:

As per claim 6: a microwave absorber to enhance absorption of microwave radiation (column 3, lines 30-45).

As per claim 12: microwave absorbers selected from components capable of increasing absorption of microwave radiation, said components carbon black, minerals (column 3, lines 30-45).

As per claim 13: said microwave radiation absorber comprises said polar molecules said polar molecules comprising alcohols, amines, ammonium salts, or conductive polymers (column 3, lines 30-45).

As per claim 14: microwave absorbers being selected from components capable of increasing the absorption of microwave radiation, said components being polar molecules comprising alcohols, amines, ammonium salts, or conductive polymers (column 3, lines 30-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Laksin et al. with the disclosure of Souder in order to provide a more efficient curing process and a more durable image.

Claims 7, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksin et al. (US 20020068772) in view of Souder (US 4156626) and Aoki (US 5965252).

Laksin et al. disclose the following claim limitations:

As per claim 7: an ink having a thermal initiator [0076], printing with said ink an image bearing pattern on a substrate [0016]; and irradiating by microwave radiation said printed image bearing pattern such that said image bearing pattern is cured by heat generated by said microwave radiation [0076].

Laksin et al. do not disclose the following claim limitations:

As per claim 7: a microwave absorber for enhancing absorption of microwave radiation and printing on an optically reflecting substrate.

As per claim 15: the optically reflective substrate comprises printing on a glass surface, a plastic surface, or a marble surface.

Souder discloses the following claim limitations:

As per claim 7: a microwave absorber to enhance absorption of microwave radiation (column 3, lines 30-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Laksin et al. with the disclosure of

Souder in order to provide a more efficient curing process and a more durable image.

Aoki discloses the following claim limitations:

As per claim 7: printing on an optically reflecting substrate (column 2. lines 30-37).

As per claim 15: the optically reflective substrate comprises printing on a glass surface, a plastic surface, or a marble surface (column 2, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Laksin et al. with the disclosure of Aoki in order to create a wider variety of printing surfaces and uses for ink jet ink.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laksin et al. (US 20020068772) and Souder (US 4156626), and further in view of Santo (US 5965252).

Laksin et al. as modified disclose the invention of claim 8; however, they do not disclose thermal initiators beign lauroyl peroxide, cumenn peroxide dicumyl peroxide, tert-amyl peroxy-benzoate, dentanedione-peroxide or 1,1'-azobis-cyclohexane-carbonitryle.

Santo discloses thermal initiators beign lauroyl peroxide, cumenn peroxide dicumyl peroxide, tert-amyl peroxy-benzoate, dentanedione-peroxide or 1,1'-azobis-cyclohexane-carbonitryle. (column 19, lines 5-51).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Laksin et al. as modified with the disclosure of Santo in order to create a higher quality ink set.

Allowable Subject Matter

Claims 1-5, 13, and 16 are allowed.

The following is an examiner's statement of reasons for allowance: prior art does not teach or suggest a microwave radiation absorber enhancing absorption of microwave radiation and conversion of the radiation into heat; and a thermal initiator being activated by the heat generated by the microwave radiation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is

(571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

12/1/06

MANISH S. SHAH
PRIMARY EXAMINER